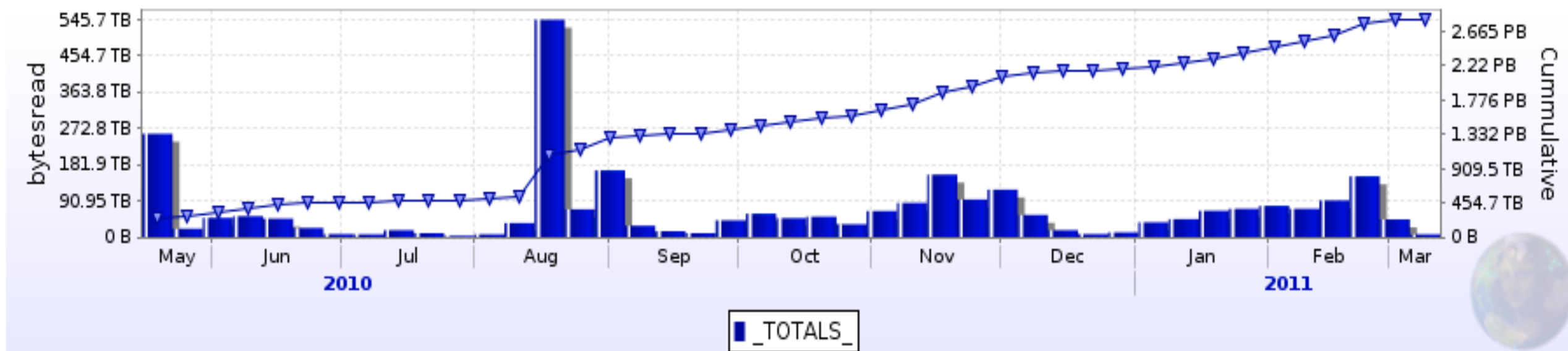


# CAF: One year of operation under load

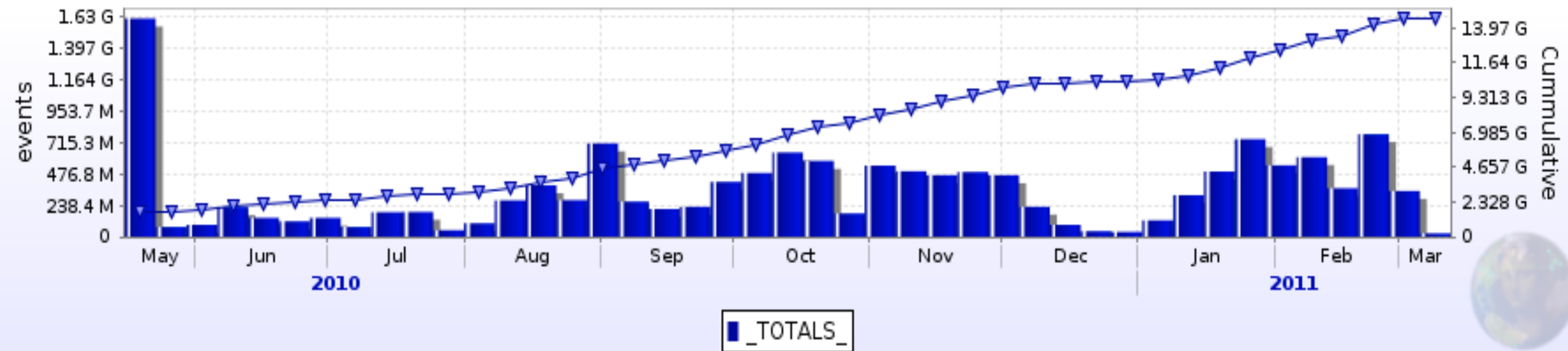
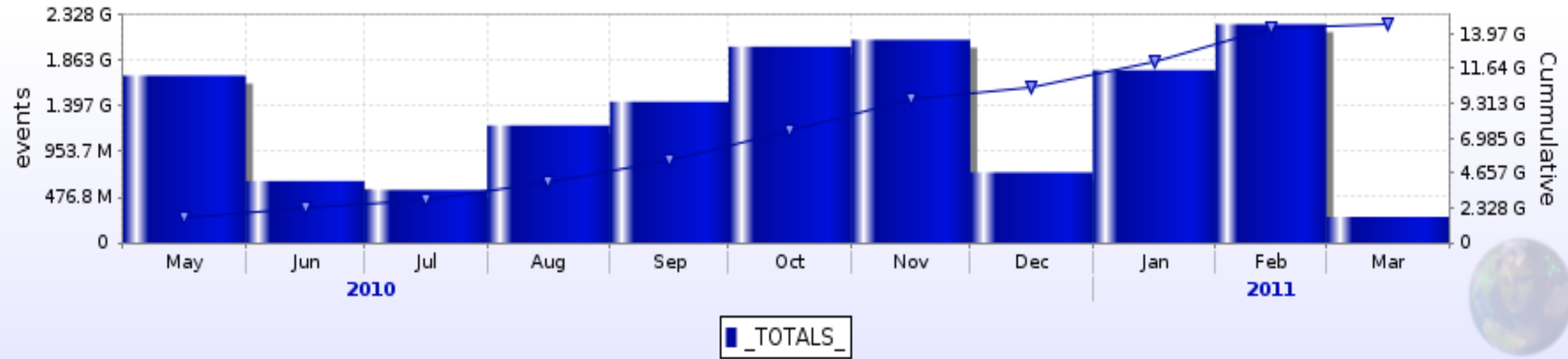
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# CAF usage statistics for May 2010 – March 2011 (Amount of processed data)



# CAF usage statistics for May 2010 – March 2011 (Number of events)



# CAF hardware

- May, 2010 – February, 2011
  - CPU cores:  $26 \times 8 = 208$
  - RAM:  $26 \times 24 = 624 \text{ GB}$
  - Disk storage:  $80.86 \text{ TB}$
  
- February-March, 2011
  - CPU cores:  $41 \times 8 = 328$
  - RAM:  $41 \times 24 = 984 \text{ GB}$
  - Disk storage:  $119.2 \text{ TB}$


# Datasets (current statistics)

- <http://alimonitor.cern.ch/stats?page=CAF2/datasets>
  - 827 datasets
  - 950,916,104 events
- *xrootd* is running in “dynamic” mode, that is, if there is no free space on a disk to stage new data, the most outdated data are removed to free some space.

# Software

- Automated synchronisation (cron) of grid packages, twice a day.
- Manual application of xrootd settings (as needed) with a script.

# Grid packages

Packages available in Grid		
Package name	Dependencies	Install 
VO_ALICE@AliRoot::v4-20-Rev-13	VO_ALICE@ROOT::v5-27-06-2,VO_ALICE@GEANT3::v1-11-20	Linux, Mac
VO_ALICE@AliRoot::v4-20-Rev-14	VO_ALICE@ROOT::v5-27-06d,VO_ALICE@GEANT3::v1-11-21	Linux, Mac
VO_ALICE@AliRoot::v4-20-Rev-15	VO_ALICE@ROOT::v5-27-06d,VO_ALICE@GEANT3::v1-11-21	Linux, Mac
VO_ALICE@AliRoot::v4-20-Rev-16	VO_ALICE@ROOT::v5-27-06d,VO_ALICE@GEANT3::v1-11-21	Linux, Mac
VO_ALICE@AliRoot::v4-20-Rev-17	VO_ALICE@ROOT::v5-27-06d,VO_ALICE@GEANT3::v1-11-21	Linux, Mac
VO_ALICE@AliRoot::v4-20-Rev-18	VO_ALICE@ROOT::v5-27-06d,VO_ALICE@GEANT3::v1-11-21	Linux, Mac
VO_ALICE@AliRoot::v4-21-11-AN	VO_ALICE@ROOT::v5-27-06b,VO_ALICE@GEANT3::v1-11-18	Linux, Mac
VO_ALICE@AliRoot::v4-21-14-AN-1	VO_ALICE@ROOT::v5-27-06c,VO_ALICE@GEANT3::v1-11-19	Linux, Mac
VO_ALICE@AliRoot::v4-21-15-AN	VO_ALICE@ROOT::v5-27-06c,VO_ALICE@GEANT3::v1-11-19	Linux, Mac
VO_ALICE@AliRoot::v4-21-16-AN	VO_ALICE@ROOT::v5-27-06d,VO_ALICE@GEANT3::v1-11-21	Linux, Mac
VO_ALICE@AliRoot::v4-21-17a-AN	VO_ALICE@ROOT::v5-28-00a,VO_ALICE@GEANT3::v1-11-22	Linux, Mac
VO_ALICE@AliRoot::v4-21-17a-AN-1	VO_ALICE@ROOT::v5-27-06d,VO_ALICE@GEANT3::v1-11-21	Linux, Mac
VO_ALICE@AliRoot::v4-21-17-AN	VO_ALICE@ROOT::v5-28-00a,VO_ALICE@GEANT3::v1-11-22	Linux, Mac
VO_ALICE@AliRoot::v4-21-17b-AN	VO_ALICE@ROOT::v5-28-00a,VO_ALICE@GEANT3::v1-11-22	Linux, Mac
VO_ALICE@boost::v1_43_0		Linux, Mac
VO_ALICE@cgal::v3.6	VO_ALICE@boost::v1_43_0	Linux, Mac
VO_ALICE@fastjet::v2.4.2	VO_ALICE@cgal::v3.6	Linux, Mac
VO_ALICE@GEANT3::v1-11-18		Linux, Mac
VO_ALICE@GEANT3::v1-11-19		Linux, Mac
VO_ALICE@GEANT3::v1-11-20		Linux, Mac
VO_ALICE@GEANT3::v1-11-21		Linux, Mac
VO_ALICE@GEANT3::v1-11-22		Linux, Mac
VO_ALICE@GEANT4::v9.3.p02_vmc.2.10	VO_ALICE@ROOT::v5-27-06b	Linux, Mac
VO_ALICE@GEANT4::v9.4_vmc.2.11	VO_ALICE@ROOT::v5-27-06d	Linux, Mac
VO_ALICE@ROOT::v5-27-06-2		Linux, Mac
VO_ALICE@ROOT::v5-27-06b		Linux, Mac
VO_ALICE@ROOT::v5-27-06c		Linux, Mac
VO_ALICE@ROOT::v5-27-06d		Linux, Mac
VO_ALICE@ROOT::v5-28-00a		Linux, Mac

# Analysis (user perspective)

- By default, user gets 82 workers
  - Was 160 previously but that posed problems with connection (not scalable?)
- Data are not staged evenly
  - After CAF extension last month data mainly resides on “old” nodes
    - The data are read remotely by workers which do not have them and this creates substantial traffic between nodes
  - We attempted data restaging after CAF extension but it was unsuccessful due to a bug with credentials (we were mixing credentials from “alien-token-init” and “grid-proxy-init”)
    - We are restaging the data gradually, without interfering with user analysis



# Future plans

- Automated data staging once reconstructed
- Multi-master configuration
- Stress tests
- ...

# Resources

- Documentation

- AAF site: <http://aaf.cern.ch>

- CAF monitoring
- CAF datasets
- AliEn packages
- User manual
- Savannah

- Offline pages:

<http://aliweb.cern.ch/Offline/Activities/Analysis/CAF/index.html>